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ABSTRACT

This Texas higher education plan outlines the goals of closing the gaps in higher education participation and success, in educational excellence, and in funded research over the next 15 years. Major goals include the following: (1) closing the gaps in participation rates across Texas to add 500,000 more students; (2) increasing by 50 percent the number of degrees, certificates and other identifiable student successes from high quality programs; (3) substantially increasing the number of nationally recognized programs or services at colleges and universities in Texas; and (4) increasing the level of federal science and engineering research funding to Texas institutions by 50 percent to $1.3 billion. Targets and strategies for each goal are provided, as is an overall vision for Texas higher education. One of the strategies for the state for closing the gaps in participation is to make the Recommended High School Program the standard curriculum in Texas public high schools and require it for admission to Texas public universities by 2008. To assure progress towards these goals, the state can develop benchmarks and measures to assess progress toward goals of the plan by each institution and by higher education as a whole. To help increase participation in higher education for all Texans, the amount of grants and scholarships must be increased. (JA)

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ED 450 851

Texas Higher Education Plan

Closing the Gaps, By 2015

- ✓ Participation
- ✓ Success
- ✓ Excellence
- ✓ Research

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EXECUTIVE SUMMARY

Texas is profiting from a diverse, vibrant and growing economy. Yet this prosperity could turn to crisis if steps are not taken quickly to ensure an educated population and workforce for the future. At present, the proportion of Texans enrolled in higher education is declining. Too few higher education programs are noted for excellence and too few higher education research efforts have reached their full potential.

Texas must take bold steps for the future success of its people. This higher education plan outlines the goals of *closing the gaps* in higher education participation and success, in educational excellence, and in funded research over the next 15 years. It is by no means a list of all desirable actions in Texas higher education, but rather outlines the four challenges which are the most critical to overcome for the future well-being of our state.

Goal 1: Close the Gaps in Participation

By 2015, close the gaps in participation rates across Texas to add 500,000 more students.

Strategies for the State

1. Make the Recommended High School Program (college preparatory courses) the standard curriculum in Texas public high schools and make it a minimum requirement for admission to Texas public universities by 2008.

2. Recruit, prepare and retain additional well-qualified educators for elementary and secondary schools.

3. Ensure that all students and their parents understand the benefits of higher education and the necessary steps to prepare academically and financially for college.

    - Carry out a sustained statewide public awareness campaign on the value of a college education, the preparation required and financial aid available.

Make the Recommended High School Program the standard curriculum in Texas public high schools and require it for admission to Texas public universities by 2008.

- Establish coordinated P-16+ informational, motivational and academic programs to prepare students for college.

4. Establish an affordability policy that ensures students are able to participate and succeed in higher education by:

   - Providing grants and scholarships to cover tuition, fees, and books for every student with financial need,

   - Setting tuition and fees in a manner that closes gaps in participation and success, and

   - Establishing incentives that increase affordability through academic and administrative efficiencies in the higher education system.

Goal 2: Close the Gaps in Success

By 2015, increase by 50 percent the number of degrees, certificates and other identifiable student successes from high quality programs.

Strategies for the State

1. Focus college and university efforts on increasing graduates in education, engineering, computer science, math, physical science, allied health, nursing and other critical fields.

2. Carry out the state's Uniform Recruitment and Retention Strategy and other efforts aimed at making college and university enrollment and graduation reflect the population of Texas.

3. Fund colleges and universities to reward increases in retention and graduation from high quality programs.

4. Create incentives and requirements for seamless student transitions among high schools, community and technical colleges, universities and health-related institutions.

5. Make partnerships and collaborations between the business community and higher education institutions a part of the culture of these organizations.

Carry out the state's Uniform Recruitment and Retention Strategy and other efforts aimed at making college and university enrollment and graduation reflect the population of Texas.

Goal 3: Close the Gaps in Excellence

By 2015, substantially increase the number of nationally recognized programs or services at colleges and universities in Texas.

Strategies for the State

1. Establish ladders of excellence for different types of institutions.
    - Require each public college and university to identify one or more programs or services to improve to a level of nationally recognized excellence and prepare a strategic plan to accomplish this goal.
    - Identify peer institutions for each public institution and establish excellence benchmarks.
2. Fund competitive grants to community and technical colleges and universities to match business contributions for acquiring equipment and software and maintaining high-tech instructional laboratories.

Require each public college and university to identify one or more programs or services to improve to a level of nationally recognized excellence.

Goal 4: Close the Gaps in Research

By 2015, increase the level of federal science and engineering research funding to Texas institutions by 50 percent to $1.3 billion.

Strategies for the State

1. Permit universities, like health science centers, to retain all overhead income from grants and contracts.
2. Establish the Texas Science and Engineering Collaborative to expand research in focused areas through collaboration among institutions.
3. Increase funding for the Advanced Research/Advanced Technology Programs.
4. Establish a competitive grant program to expand research and research capacity at developing research universities in current and projected major urban areas.

Permit universities to retain all overhead income from grants and contracts.

Assuring Progress Towards These Goals

Strategy for the State

Develop benchmarks and measures to assess progress toward goals of the plan by each institution and by higher education as a whole.

TEXAS HIGHER EDUCATION: CLOSING THE GAPS

Higher education is a great benefit to both individuals and society. People with a college education earn larger salaries and see greater financial benefits over their lifetimes. They also have greater job satisfaction and employment opportunities, and are more likely to give back to their communities. Their higher earnings contribute to the state's economic base through taxes and they are less likely to require public assistance.

"College graduates will make $1.2 million more in total salary over their lifetime than non-graduates."
-- National Center for Education Statistics

Texas has the opportunity to significantly improve the accessibility and quality of education for its people to enrich the future of both the individual and the state. To do this, a commitment must be made to *close the gaps* within the state in enrollment and success, *close the gaps* in excellence by providing high quality educational programs which meet and exceed that of other states, and *close the gaps* in research by building research centers that go beyond those of other states.

Currently, Texas is profiting from a diverse, vibrant and growing economy. Yet this prosperity could turn to crisis if steps are not taken quickly to ensure an educated workforce for the future. The state's economy depends upon the wealth of its people and their contributions to the state. An educated workforce contributes more to the state's prosperity, providing added fuel for a growing economy. Education, at its best, also allows individuals to do what they want to do, rather than what they have to do and it opens their minds to better understand the world around them.

If the gap in enrollment by ethnic group is not closed, Texas will have increasingly fewer college students and college graduates.

At present, a large gap exists among racial/ethnic groups in both enrollment and graduation from the state's colleges and universities. Groups with the lowest enrollment and graduation rates will constitute a larger proportion of the Texas population. If this gap is not closed, Texas will have proportionately fewer college graduates. In addition, more higher education programs need to be recognized for excellence, and more higher education research efforts need to reach their full potential.

Texas must take bold steps for the future success of its people. This higher education plan outlines the goals of *closing the gaps* in higher education participation and success, in educational excellence, and in funded research over the next 15 years. It is by no means a list of all desirable actions in Texas higher education, but rather opens the dialogue concerning the future of Texas higher education and outlines the four challenges most critical to overcome for the future well-being of our state. The plan responds to pressing regional and statewide needs and allows flexibility on the part of local institutional leaders to stimulate the creativity needed to achieve these goals. Companion documents, which were developed by task force groups within the Texas Higher Education Planning Committee, are available as well. These reports supplement this plan and focus in greater detail on issues related to participation and success, technology workforce, and health professions education.

The Future of Texas

Texas stands at a crossroads. In one direction lies a future that follows the path of the current courses of action. Enrollments in the state's public and independent colleges and universities are not keeping pace with the booming Texas population. There is a shortfall in the number of degrees and certificates earned. And, fewer degrees and certificates earned leads to a less-educated workforce. The state's workers are not able to support a growing state economy, which is necessary for a higher quality of life for all Texans, and individuals have fewer personal choices.

If participation and graduation rates remain low, the poverty rate in Texas will increase by 3 percent and the average Texas household income will decline by $3,000 in constant dollars by 2030.
-- Steve Murdock, Chief Demographer, Texas State Data Center

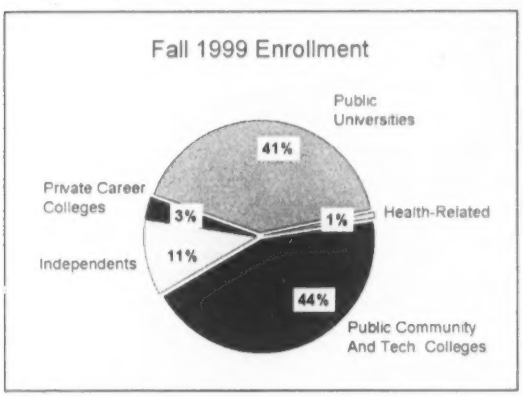
In the other direction lies a future that follows a new path. Texas accepts the challenge to support its people by providing opportunities for educational advancement through high quality programs. Enrollment and graduation rates increase. Institutions excel nationally through programs of excellence and advancements in research. The state's economy is advanced by a strong workforce and innovations created by research and development efforts. Individuals are challenged, their minds are expanded and they develop a growing interest in the changing world around them.

The second path offers a far brighter future for Texas as it moves into the 21st century – a route that is shaped by the acknowledgment that the state can build prosperity only by educating its people. Only by sharply reversing Texas' declining enrollment and graduation rates, and building excellence in education and research, can the state compete successfully with other states and nations. This reversal will allow Texas to generate, attract and retain state-of-the-art, high-wage businesses and employment opportunities for all of its people. To accomplish these goals, institutions must work to use all of their resources efficiently. The people of Texas need to be resolved to support higher education in a manner that demonstrates the critical role it plays in improving the state and its people.

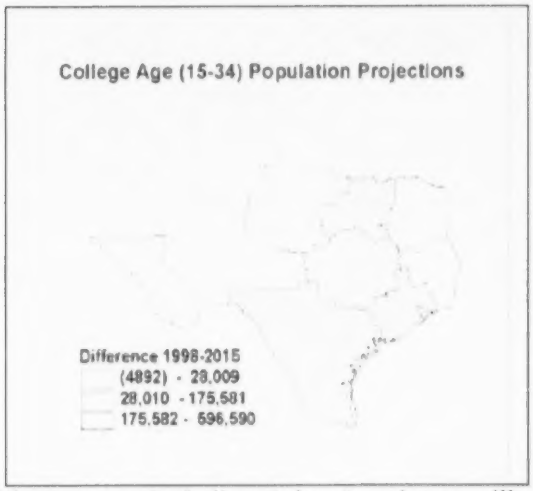
A VISION FOR TEXAS HIGHER EDUCATION

Every Texan educated to the level necessary to achieve his or her dreams; no one is left behind, and each can pursue higher education; colleges and universities focus on the recruitment and success of students while defining their own paths to excellence; education is of high quality throughout; and all levels of education, the business community, and the public are constant partners in recruiting and preparing students and faculty who will meet the state's workforce and research needs.

The vision arises from the strong higher education foundation developed by the state over recent decades. Since 1965, Texas has added 42 public community and technical college campuses, 12 public universities and four public health science centers. Public higher education enrollments have increased by 610,000 students. During the same period of time, the independent sector of Texas higher education added three universities and increased its enrollment by approximately 40,000 students; these independent institutions play an important role in educating the people of Texas. In total, Texas public higher education institutions include 50 community college districts with 74 campuses, four technical colleges with two extension centers, two state colleges and a technical institute, 35 universities, eight health-related institutions, plus 40 independent colleges and universities, one independent medical school, and 31 degree granting private career colleges. Today, total enrollment exceeds 990,000 students.



Despite these additional institutions and students, much work remains for Texas to develop its higher education system to meet the needs for the continued growth of the state's economic prosperity. Although the Texas educational system is reasonably successful, there is room for improvement. In comparison to California, New York, Florida and other large states, Texas falls short in higher education enrollment rates, degrees awarded, federal research funding and nationally recognized programs.



Population changes sweeping the state require creative solutions to sort out the subsequent educational challenges. The population projections of the state forecast the greatest growth to occur in urban areas and along the Texas border. By 2008, Texas will become a minority-majority state. Hispanics will account for more than 40 percent of the state's population. Blacks will represent 11 percent. Whites will be 45 percent. Other groups, including Asian-Americans, will represent 4 percent. The state's Hispanic and Black populations have enrolled in higher education at rates well below that of the White population. The educational enrollment and success rates for all Texans will have to rise more rapidly than ever to avoid a decline in educational levels.

The challenge is to determine the means that will offer the greatest opportunities for the people of Texas. Over recent decades, Texas has concentrated on access to college, with a lesser focus on improving retention, graduation and overall educational quality.

To reach the goals of this vision, Texas must:

- **Close the gaps in participation and success** in higher education across the state to build a better educated population and workforce through collaborations with institutions of higher education, the public school system and the business community;

- **Close the gaps in excellence** by providing the highest quality education programs and services at every college and university and establishing centers of national and international prominence in teaching, research and public service; and

- **Close the gaps in research** by building research centers to provide ground-breaking innovations that will drive the economy and raise the quality of life.

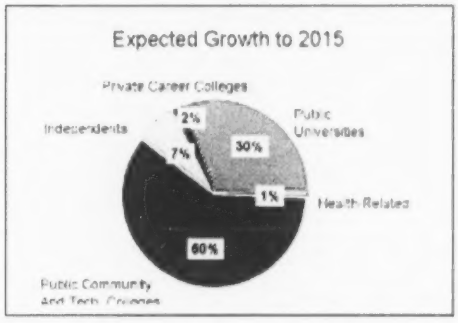
Goal 1: Close the Gaps in Participation

By 2015, close the gaps in participation rates across Texas to add 500,000 more students.

Only 5 percent of the Texas population was enrolled in higher education in recent years, compared to a national average of 5.4 percent. In Texas, that 0.4 percent difference represents 76,000 students. Compared to the other 10 most populous states, the enrollment rate in Texas is below that of 4 states. California and Illinois enroll 6.1 percent of their state's population, Michigan and New York both enroll 5.6 percent

The participation rate in Texas is lower than the national average.

Although the percentage differences between the Texas higher education participation rate and the rates in other states appear small, they represent tens of thousands of students. For example, Texas would have to enroll immediately 200,000 more students to reach California's current participation rate. Texas will have to enroll approximately 500,000 additional students in public and independent institutions to raise its participation rate to 5.7 percent by 2015, which is the first goal of this plan.



Community and technical colleges, public and independent colleges and universities, health-related institutions, private career colleges will all play an important role in educating these students. In particular, it is estimated that 60 percent of the 500,000 students will begin at community and technical colleges. The Independent Colleges and Universities of Texas organization estimates that these institutions can enroll 7,500 more full-time equivalent students if state sponsored need-based grants are made available to these students.

Reaching the goal will require greater numbers of faculty – including minority faculty – creativity in utilizing resources and recognition of the need to reach every student. As students graduate and become successful in the workplace, they will serve as role models for younger students to follow. This will promote the value of education for future students.

Reaching the goal will also require increasing participation from every population group, but especially Hispanics and Blacks. The White college enrollment rate of 5 percent continues to exceed the 3.6 percent participation rate for Hispanics and the 4.3 percent rate for Blacks. Hispanic and Black Texans will increase from 42 percent to 52 percent of the state's population by 2015. Unless Texas significantly increases the enrollment rates of all of its people, demographic shifts will steadily reduce the number of students enrolling in higher education from the current 5 to 4.3 percent by 2015.

Targets for Closing the Gaps in Participation

Interim targets will define progress toward the participation goal:

- Increase the overall Texas higher education participation rate from 5 percent to 5.2 percent (157,000 students) by 2005, to 5.5 percent (175,000 students) by 2010, and to 5.7 percent (172,000 students) by 2015.

- Increase the higher education participation rate for the Black population of Texas from 4.3 percent to 4.8 percent (22,200 students) by 2005, to 5.1 percent (15,000 students) by 2010, and to 5.5 percent (19,300 students) by 2015.

- Increase the higher education participation rate for the Hispanic population of Texas from 3.6 percent to 4.3 percent (101,600 students) by 2005, to 5 percent (120,000 students) by 2010, and to 5.5 percent (120,000 students) by 2015.

- Increase the higher education participation rate for the White population of Texas from 5 percent to 5.1 percent (24,100 students) by 2005, to 5.3 percent (35,000 students) by 2010, and to 5.5 percent (35,000 students) by 2015.

Participation Strategies for the State

1. **Make the Recommended High School Program (college preparatory courses) the standard curriculum in Texas public high schools and make it a minimum requirement for admission to Texas public universities by 2008.**

Ensure that students receive the high school courses needed to succeed in higher education and the workplace.

Automatically enrolling all public high school students in the college-preparatory Recommended High School Program authorized by the State Board of Education will ensure that students receive the courses needed to succeed in higher education and the workplace. This foundation will prepare students for life beyond high school, whether they plan to attend a college or university or enter the workforce. Students will be encouraged to enroll in an even more rigorous curriculum when appropriate.

2. **Recruit, prepare and retain additional well-qualified educators for elementary and secondary schools.**

"Texas had a shortfall of 41,400 public school teachers in the 1998-1999 school year." – *State Board of Educator Certification*

To provide the Recommended High School Program to all Texas students, many additional well-qualified educators will be required. Severe shortages of teachers exist in math, science, foreign language and technology, subjects required by the Recommended High School Program.

3. **Ensure that all students and their parents understand the benefits of higher education and what is necessary to prepare academically and financially for college.**

   - Carry out a sustained statewide public awareness campaign on the value of a college education, the preparation required and financial aid available.

   - Establish coordinated P-16+ informational, motivational and academic programs to prepare students for college.

A sustained, statewide public awareness campaign, designed to reach Texas families through television, radio, newspapers, Internet-based communications and other avenues will give all Texans, particularly families with no previous college experience, information about the value of higher education and ways to access and pay for college.

Public education and higher education – from pre-school through universities – must work arm-in-arm with the business community and community organizations to motivate, encourage, and equip students at every level to take the necessary steps to prepare for higher education.

4. Establish an affordability policy that ensures students are able to participate and succeed in higher education by:

- Providing grants and scholarships to cover tuition, fees, and books for every student with financial need,
- Setting tuition and fees in a manner that closes gaps in participation and success, and
- Establishing incentives that increase affordability through academic and administrative efficiencies in the higher education system.

To help increase participation in higher education for all Texans, the amount of grants and scholarships must be increased. Economically disadvantaged students represent an increasing proportion of the state's traditional college-age population and should be considered a high priority for gift aid.

An unknown number of students never consider higher education because they believe they cannot afford it. Colleges and universities can attract students who historically have not believed that higher education is within their reach by making certain that higher education is affordable through financial aid. Colleges and universities should also monitor the cost of higher education as compared to what a family can pay based upon its income.

Texas' investment in students today with financial aid will mean a reduction in the need for financial aid in the future as students graduate and increase their level of income to support their children.

Goal 2: Close the Gaps in Success

By 2015, increase by 50 percent the number of degrees, certificates and other identifiable student successes from high quality programs.

Increasing the number of students completing bachelor's degrees from 57,000 to 104,000 by 2015 will place Texas above the national average. In order to accomplish this, Black and Hispanic populations will need to receive bachelor's degrees in proportion to their representation in the state's population.

Statewide, less than half of the students who enter a public university will graduate with a bachelor's degree in six years.

Likewise, the number of associate's degrees earned is far behind the national average. Based on the most recent enrollment and graduation rate trends, by 2015 Texas institutions will award only 5,500 more associate's degrees, reaching approximately 28,500 degrees awarded annually.

To meet the current and projected workforce needs, Texas must award more degrees in all areas. Of particular need are degrees in nursing, technology-related disciplines, and disciplines leading to careers in teaching.

Targets for Closing the Gaps in Success

These interim targets will define progress toward the education success goal:

- Increase the number of students completing bachelor's degrees, associate's degrees and certificates from 95,000 to 120,000 by 2005; to 140,000 by 2010; and to 163,000 by 2015.
- Increase the number of students completing bachelor's degrees from 57,000 to 72,000 by 2005; to 87,000 by 2010; and to 104,000 by 2015.
- Increase the number of students completing associate's degrees from 23,000 to 26,000 by 2005; to 30,000 by 2010; and to 34,600 by 2015.

- Increase the number of students completing doctoral degrees from 2,200 to 2,500 by 2005; to 2,900 by 2010; and to 3,300 by 2015.

- Increase the number of Black students completing bachelor's degrees, associate's degrees and certificates from 9,000 to 11,000 by 2005; to 14,000 by 2010; and to 16,000 by 2015.

- Increase the number of Hispanic students completing bachelor's degrees, associate's degrees and certificates from 18,000 to 26,000 by 2005; to 36,000 by 2010; and to 50,000 by 2015.

- Increase the number of students completing engineering, computer science, math and physical science bachelor's and associate's degrees and certificates from 14,500 to 19,000 in 2005; to 24,000 by 2010; and 29,000 by 2015.

- Increase the number of students completing allied health and nursing bachelors and associate's degrees and certificates from 10,500 to 13,500 by 2005; to 16,700 by 2010; and to 20,000 by 2015.

- Increase the number of teachers certified through higher education programs annually from 13,000 to 19,000 by 2005; to 25,000 by 2010; and to 30,000 by 2015.

- increase the number of math and science teachers certified through higher education programs from less than 1,000 to 3,000 by 2015.

- Increase by 50 percent the number of students who achieve identifiable successes other than with certificates and degrees by 2015. Exceed the average performance of the 10 most populous states in workforce education provided by community and technical colleges.

Success Strategies for the State

1. **Focus institutional efforts on increasing graduates in education, engineering, computer science, math, physical science, allied health, nursing and other critical fields.**

Texas is not producing enough college graduates with technology-related degrees or degrees leading to careers in teaching and health care. All of these fields are critical to reaching the goals of this plan. As an example, high quality teachers are needed in public schools, especially in the math and science areas, to offer the Recommended High School Program to all secondary students. The higher education community must work in partnership with the elementary and secondary education community, business community and others. This will improve the recruitment, preparation and retention of students in these disciplines using a pre-school through college approach.

"Between 1990 and 1998, American's High Tech employment increased 21 percent while high-tech degrees awarded declined 5 percent." *– American Electronics Association*

2. **Carry out the state's Uniform Recruitment and Retention Strategy and other efforts aimed at making college and university enrollment and graduation reflect the population of Texas.**

Working with efforts such as the Uniform Recruitment and Retention Strategy, mandated by the 76th Texas Legislature and adopted by the Coordinating Board in 2000, the higher education community must do far more to bring about student success in colleges and universities. The Uniform Recruitment and Retention Strategy was developed to identify, attract, enroll and retain students that reflect the population of Texas. Carrying out this plan will provide greater diversity in Texas institutions of higher education. As these students graduate and take on professional positions, they will increase diversity in all areas of the workforce and serve as role models for future students.

3. **Fund colleges and universities to reward increases in retention and graduation while sustaining quality programs.**

In addition to recruiting students, colleges and universities must pay attention to the needs of students to improve retention and graduation rates. Financial incentives provided to higher education institutions for the purpose of retaining and graduating students will increase student success.

4. **Create incentives and requirements for seamless student transitions among high schools, community and technical colleges, universities and health-related institutions.**

Helping students to transition through the Texas education system is important for increasing retention and graduation. Transitions between all levels of education need to be examined to make certain that every student wishing to continue his or her education is assisted from one level to the next.

5. **Make partnerships and collaborations between the business community and higher education institutions a part of the culture of these organizations.**

Effective partnerships between business organizations and colleges and universities utilize the expertise of business professionals and other specialists who serve in teaching or team-teaching roles. These partnerships could also share laboratories or support academic laboratories. Academically, they could provide insights from businesses into curriculum decisions and foster class scheduling to accommodate the needs of working students. All these efforts will increase student success.

Goal 3: Close the Gaps in Excellence

By 2015, substantially increase the number of nationally recognized programs or services at colleges and universities.

Each institution should develop to its greatest potential within its mission, whether dedicated to meeting the needs of its region or, for some, the entire state. Institutions should also coordinate their programs and services with other institutions to assure that needs are being met in every part of the state. Most universities should not strive to be research institutions, but rather focus on strengthening their own unique missions.

Each institution should develop to its greatest potential within its mission.

All institutions contribute to the state's economic, social and cultural prosperity whether their student populations are traditionally composed of undergraduates, graduates, professionals or some combination of these populations. Eighty percent of all Texas students are enrolled at the undergraduate level, so institutions offering associate's and bachelor's degrees play a significant role in the state's system of higher education. Institutions serving graduate students are important because they are training future faculty. Thus, these graduate students need to participate in high quality programs. Local institutional leaders are a key factor in exercising creativity and ingenuity as a means to excellence. Accomplishing the goals will require innovations in the use of faculty, facilities and student support for all student populations.

Targets for Closing the Gaps in Excellence

Interim targets will define progress toward the excellence goal:

- Increase the number of research institutions ranked in the top 10 among all research institutions from zero to one, and two additional research universities ranked in the top 30 by 2010; increase the number of public research universities ranked in the top 10 among all public research universities from zero to two, and four ranked among the top 30 by 2015.

- Increase the number of public liberal arts universities ranked in the top 30 among all public liberal arts institutions from zero to two by 2010, and four by 2015.

- Increase the number of health science centers ranked among the top 10 medical institutions from zero to one by 2010, and two by 2015.

- Each college and university will have identified by 2002 at least one program to achieve nationally recognized excellence.

- Community and technical colleges and universities will have at least one program or service nationally recognized: 25 percent of the institutions by 2005; 75 percent by 2010; and 100 percent by 2015.

- Meet all benchmarks of the *Priority Plan to Strengthen Education at Texas Southern University and Prairie View A&M University*.

Excellence Strategies for the State

1. Establish ladders of excellence for different types of institutions.

Ladders of excellence will provide recognition, resources and incentives for institutions as they take steps toward excellence in each institutional classification: community, state and technical colleges, primarily undergraduate universities, universities with substantial numbers of master's and doctoral programs, health science centers and research universities. Clearly differentiated missions for Texas higher education institutions will give students, parents, business and industry, communities, and other interested people more precise and understandable information about the focus and programs of each institution.

- *Require each public college and university to identify one or more programs or services to improve to a level of nationally recognized excellence and prepare a strategic plan to accomplish this goal.*

Students seeking to further their education should not have to travel out of state to find a program of excellence. Texas institutions of higher education have numerous excellent programs; but their number needs to grow.

- *Identify peer institutions for each public institution and establish excellence benchmarks.*

Each Texas public higher education institution must identify its strengths and enhance programs critical to its mission, while at the same time phasing out programs that are not contributing to its mission. Institutions must not maintain weak programs that reduce resources available for building institutional excellence. To begin this effort, each institution must identify at least one of its programs that can be enhanced to a level of quality that will be recognized nationally. For example, based on the work done by the Committee on Office for Civil Rights Issues, Prairie View A&M University and Texas Southern University will be developing additional quality programs in a wide range of fields.

Each Texas public higher education institution must identify its strengths and enhance programs critical to its mission.

Peer institutions must be identified for each institution to provide benchmarks for measuring progress. The Coordinating Board will work with Texas colleges and universities to identify peer institutions and to establish benchmarks, building a foundation that will be used to make national comparisons.

2. Fund competitive grants to community and technical colleges and universities to match business contributions for acquiring equipment and software and maintaining high-tech instructional laboratories.

A state fund that will provide money to match business contributions for equipping laboratories will leverage state resources and support improvements in the quality and relevance of new and existing programs.

Goal 4: Close the Gaps In Research

By 2015, increase the level of federal science and engineering research funding to Texas institutions by 50 percent to $1.3 billion.

Despite the success of many Texas health science centers, research universities and regional and specialized institutions in attracting more research funds over recent years, none of the state's institutions ranks among the top 20 nationally in federal research and development grants. Overall, Texas ranks sixth among the states in the amount of federal research and development funding. Nationally, at least 10 institutions in other states individually receive more intellectual property income – income generated by research discoveries and applications – than is received by all Texas higher education institutions combined.

Overall, Texas ranks sixth among the states in the amount of federal research and development funding.

To increase the level of federal research and development funds, it will be important to support the work of high quality faculty and graduate students. It is the faculty who obtain federal research grants, and the quality of their work must be exceptional to compete with faculty from other states. Graduate students support the work of faculty, and in the process learn the needed skills to conduct independent research in the future.

Targets for Closing the Gaps in Research

Interim targets will help measure progress toward the research goal:

- Increase federal research and development funding to Texas universities and health-related institutions from $845 million to $1 billion by 2007 and to $1.3 billion by 2015.[1]

- Increase research expenditures by Texas public universities and health-related institutions from $1.45 billion to $3 billion by 2015 (approximate 5 percent increase per year).

In 1998, Texas had two institutions listed among the top 40 in federal grants for science and engineering; California had seven institutions listed.

[1]All dollar estimates are in 1998 constant dollars.

Research Strategies for the State

1. **Permit universities, like health science centers, to retain all overhead income for grants and contracts.**

Currently, the Texas Legislature allows Texas public universities to retain only 50 percent of the overhead income received from grants and contracts. Allowing them to retain all overhead will increase these institutions' research capabilities.

2. **Establish the Texas Science and Engineering Collaborative to expand research in focused areas through collaboration among institutions.**

Texas higher education institutions, the business community and the state must work together to build research capacity. This cooperation will assist contributors in identifying critical participants and resources as well as defining strategically sound areas of research and building institutional and business collaboratives that produce results greater than the sum of their parts.

Building institutional and business collaboratives will produce results greater than the sum of their parts.

3. **Increase funding for the Advanced Research/Advanced Technology Programs.**

In 1987, the 70th Texas Legislature created the Advanced Research Program (ARP) and the Advanced Technology Program (ATP) with a $60 million appropriation. These are complementary, statewide research programs providing competitive grants to Texas college and university researchers. The Advanced Research Program is designed to attract and retain the best students and researchers and help provide the knowledge base needed for innovation. The Advanced Technology Program is devoted to promoting the state's economic growth by increasing the number and quality of scientists and engineers in Texas, enlarging the technology base available to business and industry, creating new products and services, and attracting new industries to Texas.

An increase in funding to $90 million per biennium will restore to these programs the purchasing power they had when created in 1987. Designating a portion (not to exceed 30 percent) of this increase to provide matching funds that will leverage the state dollars to attract even more external research funds. It will also help increase links between higher education and the business community.

4. **Establish a competitive grant program to expand research and research capacity at developing research universities in current and projected major urban areas and at other universities with substantial research programs.**

Houston, Dallas-Fort Worth and San Antonio are among the nation's 10 largest urban areas; the research capacity at the public higher education institutions within these regions and at rapidly growing major urban areas along the border with Mexico should be further increased. At the same time, Texas must support further research advances at the state's major research universities.

A System to Ensure Progress Toward Goals

Strategy for the State

Develop benchmarks and measures to assess progress toward goals of the plan by each institution and by higher education as a whole.

These recommendations represent a shared vision and commitment to *closing the gaps* in Texas higher education. To assure that progress is made towards these goals, the state shall establish benchmarks and measures to assess progress toward the goals by each institution and Texas higher education as a whole.

Benchmarks and measures will be critical to stimulating efforts to reach the plan's goals, measuring progress or the lack of progress and making adjustments in strategies to speed movement toward the goals.